

REMARKS

In the present Office Action, claims 1-34 were pending before the Office. Of these, claims 1 and 18 were the only independent claims.

Claims 1-34 stand rejected under 35 U.S.C. § 103(a).

No claims are hereby added, canceled, or withdrawn. Claims 1 and 18 are hereby amended. No new matter has been introduced by the amendments.

A. REQUEST FOR INTERVIEW BEFORE OFFICE ACTION

Applicants respectfully request the Examiner contact the undersigned attorney to discuss the pending claims before issuance of an Office Action.

Applicants believe that a more thorough review of the underlying references and the pending claims will be helpful to further prosecution.

B. REJECTION UNDER 35 U.S.C. § 103

Claims 1-34 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Publication No. 2001/0011338 by Bonola [hereinafter *Bonola*] in view of U.S. Patent Publication No. 2002/0108025 by Shaylor [hereinafter *Shaylor*]. Independent claims 1 and 18 have been amended to even further clarify the distinctions between the present claims and the proposed

combination of *Bonola* and *Shaylor*. However, the rejection is traversed and reconsideration is respectfully requested.

Applicants respectfully submit that the proposed combination of *Bonola* and *Shaylor* fails to disclose at least two of the features of each of the independent claims. Specifically, it is submitted that the proposed combination of *Bonola* and *Shaylor* fails to disclose (1) the "determining whether a free group entry of a size required by a portion of the set of data exists" feature and (2) the "allocating" feature.

The "Determining Whether a Free **Group Entry**
of a Size Required by a Portion of the Set
of Data Exists" Feature

Independent claim 1 recites, inter alia:

determining whether a free group entry of a size required by a portion of the set of data exists in memory pre-allocated with a group size in one of a plurality of sections of a memory[.]

Independent claim 18, which has its own scope, recites a similar feature.

Applicants respectfully submit that neither *Bonola* nor *Shaylor* disclose at least the above feature of independent claim 1. Specifically, it is submitted that the primary citation to *Bonola* does not disclose the claimed feature. Accordingly, without conceding its propriety, the proposed combination of

Bonola and *Shaylor* is likewise deficient, even in view of the knowledge of one of ordinary skill in the art.

Bonola is directed to "a system and method for providing linearly scalable dynamic memory management in a multiprocessing system" *Bonola*, paragraph 2. *Bonola* explains that in multiprocessing systems (e.g., systems including multiple processors for executing multiple threads), previous schemes for managing multiple threads accessing shared memory were slow. *Bonola*, paragraphs 11-12. Accordingly, *Bonola* discusses an alternative approach for managing multiple threads accessing shared memory. See e.g. *Bonola*, paragraph 13.

In paragraphs 37-38, *Bonola* discusses examining a heap subregion "to determine if there is an appropriately sized heap subregion 302A-302F in the free list..." and assigning "the address of the heap subregion 302A-302F contained in the entry 408" to the application. *Bonola* goes on in paragraphs 39-40 to discuss dividing a remaining half of the heap subregion in half if "the remaining half of the heap subregion contains twice as much memory as is required by the requesting application..." This process is "repeated until a heap subregion is yielded which does not have twice as much memory as is required."

The Office Action contends that paragraph 37 of *Bonola* discloses the above feature. Specifically, the Final Office Action contends *Bonola* "... executes HeapAlloc... examine heap structure [to] determine if there is an appropriately sized heap

sub-region in the free list wherein the free list contains unassigned heap sub-regions...". This contention is respectfully traversed.

According to the paragraph of *Bonola* cited (paragraph 37), the N bits of the heap data structure can be used to determine whether there exists an "appropriately sized subregion 302A-302F in [a] free list...". While the technique discussed in *Bonola* may indicate the existence of an unassigned aggregate sub-region containing memory resources of a certain size, it does not indicate whether a free group entry of a size required by a portion of the set of data exists in memory pre-allocated with a group size in one of a plurality of sections of memory. It is respectfully submitted that *Bonola* is silent with respect to pre-allocation of sections of a memory with a group size.

With regard to this feature, Applicants' specification clearly indicates what is meant by pre-allocation of sections of memory with a group size:

The memory may be divided into sections, each of which is allocated a size, based on a set of data anticipated to be received by the hardware, before actually receiving any data in the hardware.

Applicants' specification, page 4, lines 17-20. This disclosure is in contrast with the disclosure of *Bonola*, in which unassigned subregions of memory having different sizes are "created" simply by virtue of the assignment of surrounding memory sections (see *Bonola*, paragraph 33). Thus, such subregions are not planned in

advance, and therefore cannot be pre-allocated with a size at all, much less pre-allocated with a size based on a set of data anticipated to be received by the hardware.

In view of the above, Applicants respectfully submit that *Bonola* cannot properly be relied upon for disclosing the above feature. Applicants further submit that the secondary citation to *Shaylor* has not been contended to cure the deficiency in the citation to *Bonola*. Finally, it is noted that the above feature **is an expressly recited feature** in the claims.

The "Allocating" Feature

Independent claim 1 recites, inter alia:

if the memory includes one or more sections of an unallocated size, allocating one of the sections of an unallocated size to the size required by the portion of the set of data thereby creating a section of a dynamically allocated size, the section of the dynamically allocated size including one or more group entries of the size required by the portion of the set of data, the dynamically allocated size being the smallest-sized group entry necessary to store the portion of the set of data.

Independent claim 18, which has its own scope, recites a similar feature.

Applicants respectfully submit that neither *Bonola* nor *Shaylor* disclose at least the above feature of independent claim

1. Specifically, it is submitted that the secondary citation to *Shaylor* does not cure the conceded deficiency in the primary citation to *Bonola*. Accordingly, without conceding its propriety, the proposed combination of *Bonola* and *Shaylor* is likewise deficient, even in view of the knowledge of one of ordinary skill in the art.

The Office Action concedes that the primary citation to *Bonola* does not disclose the above feature. *Office Action*, page 3. The Office Action rejects independent claim 1, contending that the secondary citation to *Shaylor* provides this necessary disclosure. *Office Action*, page 3. This contention is respectfully traversed.

Shaylor relates to "managing memory in a computer environment based on the JAVA programming language." *Shaylor*, paragraph 2. The specific citation to *Shaylor* discusses a heap component dynamically changing size while a task is executing. *Shaylor*, paragraph 38. Paragraph 38 goes on to say that "physical address space immediately adjacent to the heap... may be available in which case the heap component is simply expanded into the available address space as shown in FIG. 4." The Office Action contends that this expansion into the available address space equates to the

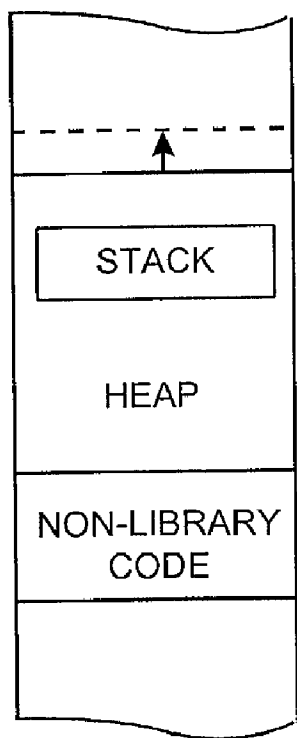


FIG. 4

above feature. This contention is respectfully traversed.

As is evident from a review of FIG. 4 and paragraph 38 of *Shaylor*, no disclosure whatsoever is made regarding group entries in the available physical address space. That is, the above feature expressly recites "the section of the dynamically allocated size including or more group entries..." Nothing in the citation to *Shaylor* discloses the available space as including one or more group entries.

In view of the above, Applicants respectfully submit that *Shaylor* cannot properly be relied upon for disclosing the above feature. Finally, it is noted that the above feature **is an expressly recited feature** in the claims.

The Newly Added "Adapted to Allocate Memory into a Section including one or more Group Entries" Language

Finally, to expedite prosecution, independent claims 1 and 18 have been amended to even further clarify the distinctions between the present claims and the proposed combination of *Bonola* and *Shaylor*. Specifically, the preamble of claim 1 - referenced in the body of the claim and therefore of patentable weight - recites:

An apparatus adapted to allocate memory into a section including one or more group entries[.]

Applicants respectfully submit that neither *Bonola* nor *Shaylor* disclose allocating memory into a section including group entries.

For at least the multiple reasons above, Applicants respectfully submit the Office Action fails to establish a prima facie case of obviousness. Accordingly, favorable reconsideration and withdrawal of the §103 rejection are respectfully requested.

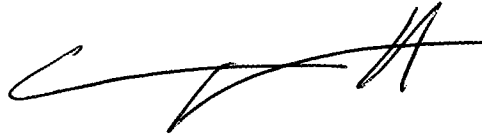
C. CONCLUSION

Since Applicants assert that all the independent claims as amended are in condition for allowance and all remaining claims properly depend from the independent claims, Applicants assert that all claims are allowable.

Applicants do not believe a Request for Extension of Time is required but if it is, please accept this paragraph as a Request for Extension of Time and authorization to charge the requisite extension fee to Deposit Account No. 04-1696.

Applicants do not believe any additional fees are due regarding this Amendment. However, if any additional fees are required, please charge Deposit Account No. 04-1696.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'Christopher P. Mitchell', with a stylized flourish at the end.

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